REMARKS/ARGUMENTS

Claim Amendments

The Applicant has amended claims 1 and 22 to correct an informality. Applicant respectfully submits no new matter has been added. Accordingly, claims 1-46 are pending in the application. Favorable reconsideration of the application is respectfully requested in view of the foregoing amendments and the following remarks.

Claim Rejections – 35 U.S.C. § 103 (a)

Claims 1-46 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Lee (US 6,539,225 B1) in view of Mirza, et al. (US 5,991,616 A) and C. E. Perkins et al. "Route Optimization in Mobile IP", draft-ietf-mobileip-optim-08.txt (Feb. 25, 1999). The Applicant respectfully traverses the rejection of these claims.

The present application discloses and claims a method for handing off a mobile node from an old sub-network router to a new sub-network router in an Internet Protocol based wireless access network and a respective wireless access network. In that regard a handoff starting time is obtained from a lower layer of the OSI (Open Systems Interconnection) model and information from a lower layer of the OSI model is used to notify the mobile node that a connection with the old sub-network router will be discarded within a predetermined amount of time. In accordance with the teachings of the present invention a new care-of address is obtained for the mobile node from the new sub-network router and in response to receiving the discarding notification, a request message is sent from the mobile node to a base node via the new sub-network router requesting a new binding. A new care-of address binding is then created in the base node, a reply message is issued from the base node to the mobile node via the new sub-network router indicating that the new care-of address binding has been created and a transfer of old care-of address data packets from the base node to the mobile node is synchronized.

The Lee reference appears to disclose a wireless call handoff with respect to deregistration of an old binding and creating a new binding. Lee discloses providing a seamless handover by providing an old and a new address binding in parallel during the

handover procedure. As noted in the Detailed Action, column 4, lines 66-67 of the Lee reference describes a state of the art routing technique and is not related to obtaining any kind of timing information. There is no mention or teaching in the Lee reference regarding obtaining a handoff <u>starting</u> time from a lower layer and using information from a lower layer to notify a mobile terminal that an old connection will be discarded within a <u>predetermined</u> amount of time.

Lee is cited for using information from a lower layer and discarding the connection within a predetermined amount of time. The element at issue, from claim 1, is shown below.

> ...using information from the lower layer of the OSI model to notify the mobile node that a connection with the old sub-network router will be discarded <u>within a predetermined amount of time;</u> (emphasis added)

The Applicant respectfully submits that the steps in the Lee reference, of using lower layer information for routing purposes as stated in column 4 lines 66-67 (tunneling communication packets to and from Old Foreign Agent) and indicating that the handoff procedure continues until it is completed - in column 5, line 67 – column 6, line 2 (communication content is provided to both old and new BSS) do not disclose notifying a mobile node that the connection will be discarded within a predetermined amount of time. As claimed in the Applicant's invention, the information regarding starting time is for notifying the mobile node that the connection with the current sub-network router will be discarded in a period of time starting from the "starting time". The Lee reference fails to teach the limitation of notifying the mobile node that the connection will be discarded in a predetermined time.

The Mirza reference is cited for teaching a handoff starting time. The Mirza reference appears to disclose a wireless and wireline integrated billing method that allows post processing of separately acquired wireless and wireline billing data. Basically, Mirza provides a wireline billing solution to wireless calls in an IP network. The cited passage in Mirza (col. 2, lines 63-66) indicates that the AIN SCP (wireline) upon receiving a clearing call from the wireless section is able to capture all start and stop times and the wireless air time all of which is integrated with the wireline billing

data. In other words, a wireline function is gathering wireless data between a start time notification and a stop time notification. Included are the subsequent start times and stop times correlated with the respective cell ID information in the wireless network (col. 4, lines 12-19). However, the purpose of the Mirza reference is to identify cell locations for billing details and not for setting a time for discarding a connection with an old sub-network router as in the Applicant's invention. Also, the measurement of time in the Applicant's invention is for notification of discarding the old sub-network router connection in real time; time measurement in the wireless network in the Mirza reference is for post processing of integrated wireline and wireless bills. The Mirza reference also fails to disclose a predetermined amount of time for discarding the connection.

The Perkins reference appears to disclose extensions to Mobile IP protocol that allow datagrams to bypass the mobile node's home agent. As discussed in Perkins, when a mobile node is visiting a subnet, even datagrams on the same subnet must be sent through the mobile node's home agent. Perkins is cited for notifying a mobile node that a connection with an old sub-network router will be discarded and issuing a reply message from a new sub-network router that a new care-of address binding has been created.

Perkins fails to teach or suggest a predetermined amount of time for discarding the connection. The Perkins reference also fails to teach obtaining timing information from a lower layer and sending timing information in a notification message to a mobile node, thus rendering the claimed subject matter non-obvious with respect to a combination of the Lee reference, the Mirza reference and the Perkins reference.

Applicants respectfully submit that the method of handing off a mobile node between old and new sub-network routers in an IP based wireless network as disclosed and claimed by the present application is not rendered obvious by any of the cited references. Moreover, the step of using information from a lower layer to notify the mobile node that a connection with an old sub-network router will be discarded in a predetermined amount time is not disclosed or taught anywhere in the cited references.

This being the case the Applicant respectfully requests the withdrawal of the rejection of claim 1.

The above limitations are recited in Applicant's claim 1 and analogous limitations are recited in claims 22 and 36. Thus, claims 1, 22 and 36 and all claims dependent therefrom are distinguishable from the Lee, Perkins and Mirza references and a withdrawal of the rejection of these claims is respectfully requested.

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CONCLUSION

In view of the foregoing remarks, the Applicant believes all of the claims currently pending in the Application to be in a condition for allowance. The Applicant, therefore, respectfully requests that the Examiner withdraw all rejections and issue a Notice of Allowance for all pending claims.

The Applicant requests a telephonic interview if the Examiner has any questions or requires any additional information that would further or expedite the prosecution of the Application.

Respectfully submitted,

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